

CLEAN COPY OF AMENDED CLAIM

1. (Twice Amended) A device with a stator having high performance flat coils comprising:

a stator ring formed by a plurality of arcuate stator segments, each of said stator segments having a convexly shaped projection on one end thereof and a concavely shaped recess on an opposing end, said recess having a complementary contour to a contour of said projection for joining said stator segments end to end, each of said stator segment having a plurality of angularly spaced grooves in an arcuate surface thereof;

a plurality of stator teeth respectively engaged in said grooves of said plurality of stator segments, each stator tooth being punched from silicon steel pieces and having a tooth face having a cambered surface, the stator tooth having a tooth root end extending backwards from a center of the cambered surface, a distal end of the tooth root end extending outwardly with a tooth root distal end that is not larger than a maximum width of the tooth root end, said tooth root distal end of each stator tooth being engaged in a respective one of said grooves of said stator segments;

a plurality of wire groove seats, each wire groove seat being formed by an insulator and having a T-shaped contour, each wire groove seat having a longitudinally extended vertical post for receiving a respective coil of a motor or a generator and defining an axis thereof, an interior of the longitudinally extended vertical post being hollow and

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being engagable with the stator tooth root end, and the hollow portion being a hollow end of the wire groove seat; and

a plurality of flat coils respectively disposed on said plurality of wire groove seats, each flat coil being formed as an annulus by a plurality of turns of a helically wound flat wire axially overlaid one upon another, each flat coil having an opening through which a respective longitudinally extended vertical post passes, a thickness of the flat wire being less than a depth of the longitudinally extended vertical post of the wire groove seat divided by a predetermined number of turns of the flat coil corresponding to a rated rotary speed, a width of the flat coil being smaller than a width of a winding space of a corresponding wire groove seat, a distal axial end of the flat coil being installed with an insulating piece.